

Airline Management System

DATE	25-06-2025
TEAM ID	LTVIP2025TMID29751
PROJECT NAME	Airline Management System
COLLEGE NAME	Ideal Institute Of Technology

1. Team Leader: Sabbavarapu Bhimesh Prasad

Email : Bhimeshprasad15@gmail.com

2. Team Member: Yasaya Sai Kumar

Email : saik89654@gmail.com

3. Team Member: Yedla Sai Srinivas

Email : yedlasaisrinivas1@gmail.com

1. INTRODUCTION

1.1 Project Overview

The Airlines Management System is a Salesforce-based application designed to streamline the management of airline operations. It offers features for flight scheduling, passenger booking, crew management, and more, using a centralized platform to improve operational efficiency and customer satisfaction.

1.2 Purpose

The system aims to digitize and automate airline management, reducing manual errors, increasing transparency, and delivering better service through real-time updates and structured data handling.

2. IDEATION PHASE

2.1 Problem Statement

Managing an airline's day-to-day operations such as bookings, scheduling, and crew assignments manually is inefficient, error-prone, and lacks integration across teams.

2.2 Empathy Map

Canvas Focused on airline staff, passengers, and management to identify their needs and frustrations—highlighting the demand for real-time, error-free, and accessible systems.

2.3 Brainstorming

Salesforce was identified as the ideal platform for CRM integration, automation, and reporting capabilities. Objects

like Flights, Bookings, Passengers, and Crew were considered vital.

3. REQUIREMENT ANALYSIS

3.1 Customer Journey

Map From searching flights to booking, checking-in, and boarding, the system ensures seamless transitions through each touchpoint.

3.2 Solution Requirement

Requirements include object management, custom fields, data validation, user roles, and visual dashboards.

3.3 Data Flow Diagram

Passenger -> Booking -> Flight/Crew assignments ->
Check-in -> Reports

3.4 Technology Stack

Salesforce Platform

Apex (for logic)

Flow (for automation)

Reports & Dashboards

4. PROJECT DESIGN

4.1 Problem Solution

Fit Salesforce customization provides the flexibility needed to model airline operations effectively.

4.2 Proposed Solution

Custom Salesforce app named "Airlines Management System" with tailored objects, relationships, and user interfaces.

4.3 Solution Architecture

Objects interconnected via lookup relationships and custom tabs. Field-level validations enforced with Apex triggers.

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Week 1–2: Ideation and setup

Week 3–4: Object and field creation

Week 5: Relationships and tabs

Week 6: Reports, dashboards

Week 7: Apex & flows

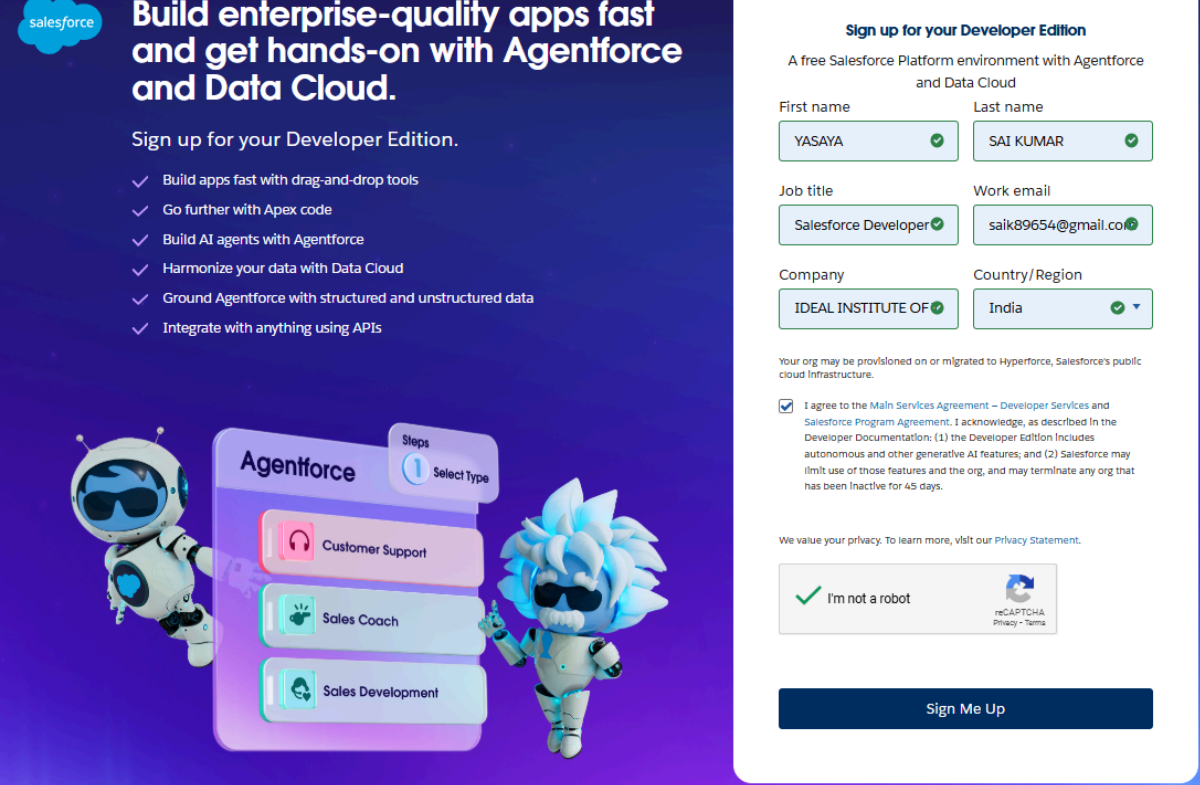
Week 8: Testing and final report

6. DEVELOPMENT PHASE (Salesforce Guided Project)

The development phase follows a structured, guided approach using Salesforce tools and best practices. It includes the following core milestones:

6.1 Developer Org Setup

Created a Salesforce Developer Edition account
via: developer.salesforce.com.



The image shows the Salesforce Developer Edition sign-up page. On the left, there's a promotional banner for Agentforce and Data Cloud. The main content area on the right is titled 'Sign up for your Developer Edition' and includes a description of the environment, a list of benefits, a list of steps, and a form to create the account. The form fields are: First name (YASAYA), Last name (SAI KUMAR), Job title (Salesforce Developer), Work email (saik89654@gmail.co), Company (IDEAL INSTITUTE OF), and Country/Region (India). There's a checkbox for agreeing to the terms and a reCAPTCHA verification step. A 'Sign Me Up' button is at the bottom.

Build enterprise-quality apps fast and get hands-on with Agentforce and Data Cloud.

Sign up for your Developer Edition.

- ✓ Build apps fast with drag-and-drop tools
- ✓ Go further with Apex code
- ✓ Build AI agents with Agentforce
- ✓ Harmonize your data with Data Cloud
- ✓ Ground Agentforce with structured and unstructured data
- ✓ Integrate with anything using APIs

Agentforce

Steps

- 1 Select Type

- Customer Support
- Sales Coach
- Sales Development

Sign up for your Developer Edition

A free Salesforce Platform environment with Agentforce and Data Cloud

First name: YASAYA ✓

Last name: SAI KUMAR ✓

Job title: Salesforce Developer ✓

Work email: saik89654@gmail.co ✓


Company: IDEAL INSTITUTE OF ✓

Country/Region: India ✓

Your org may be provisioned on or migrated to Hyperforce, Salesforce's public cloud Infrastructure.

☒ I agree to the [Main Services Agreement – Developer Services](#) and [Salesforce Program Agreement](#). I acknowledge, as described in the Developer Documentation: (1) the Developer Edition includes autonomous and other generative AI features; and (2) Salesforce may limit use of those features and the org, and may terminate any org that has been inactive for 45 days.

We value your privacy. To learn more, visit our [Privacy Statement](#).

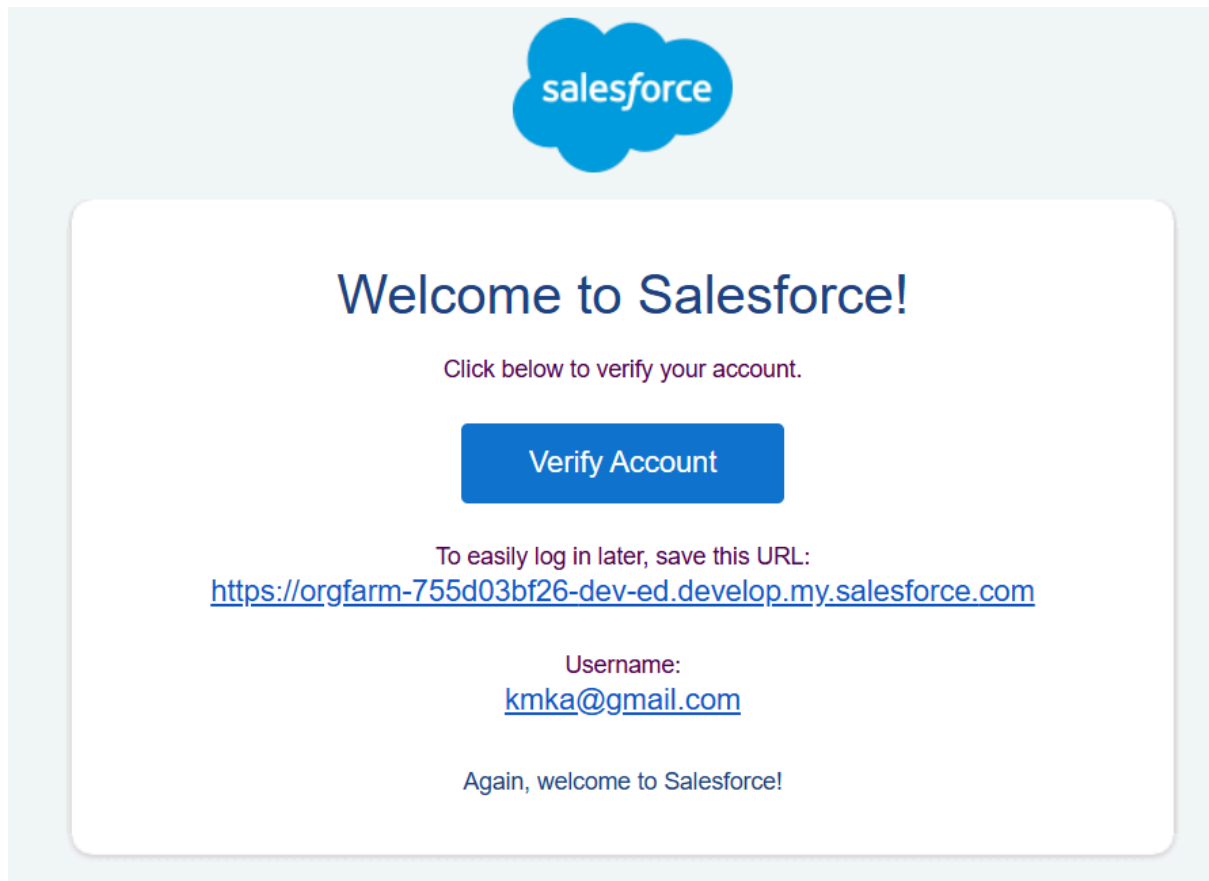
☒ I'm not a robot 

Sign Me Up

Configured basic org settings and verified user access.

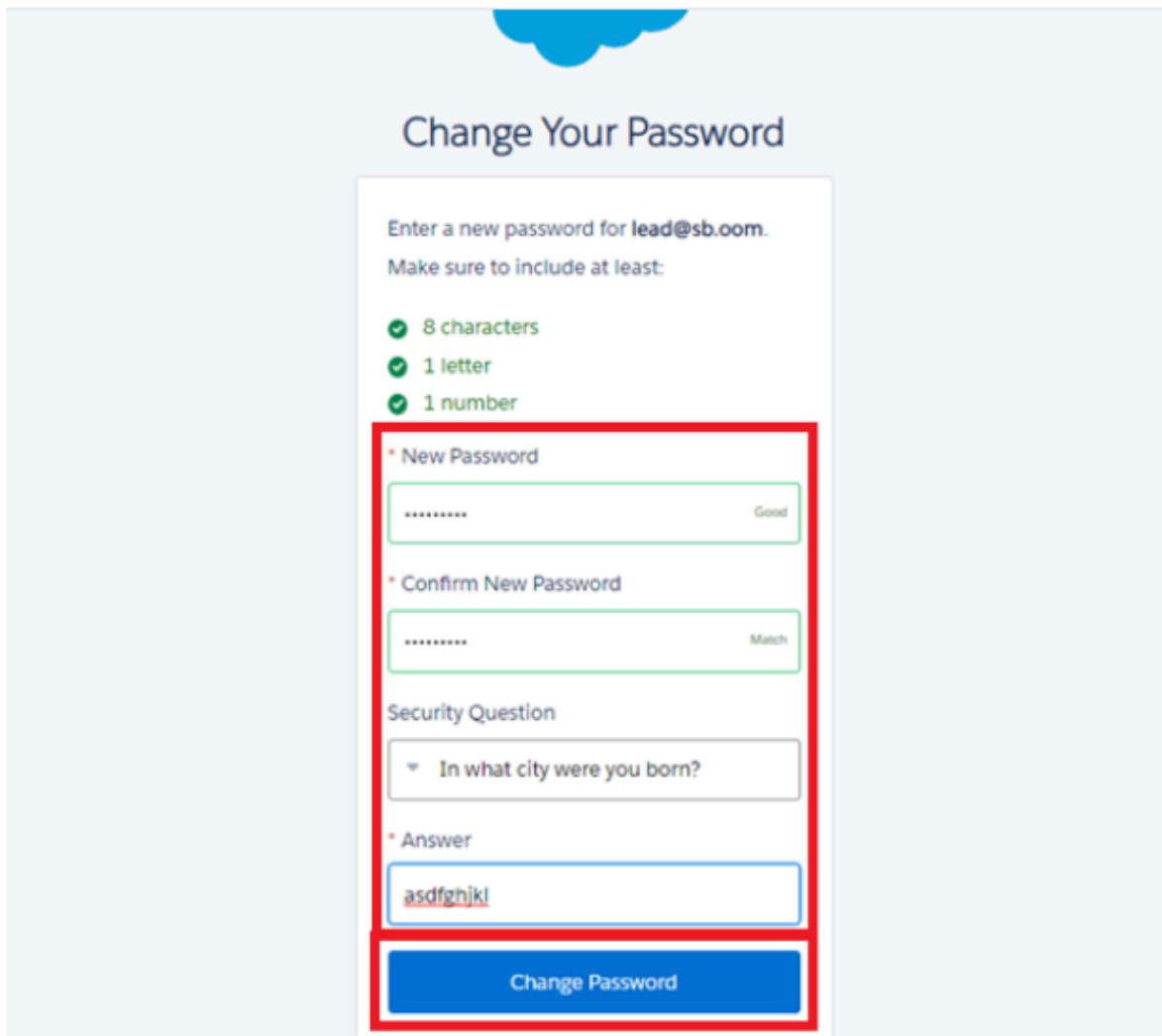
Account Activation

Go to the inbox of the email that you used while signing up. Click on the verify account to activate your account. The email may take 5-10mins.



Clicked on Verify Account

Gave a password and answered a security question and clicked on change password.



The image shows a 'Change Your Password' form. At the top, there is a blue cloud icon. The title 'Change Your Password' is centered. Below the title, the user is prompted to enter a new password for 'lead@sb.com'. A list of requirements is shown with green checkmarks: 8 characters, 1 letter, and 1 number. The form contains several input fields: 'New Password' (with a 'Good' status), 'Confirm New Password' (with a 'Match' status), a 'Security Question' dropdown menu (set to 'In what city were you born?'), and an 'Answer' field (containing 'asdfghjkl'). A blue 'Change Password' button is at the bottom. A red rectangular box highlights the 'New Password', 'Confirm New Password', 'Security Question', 'Answer', and 'Change Password' sections.

Change Your Password

Enter a new password for **lead@sb.com**.
Make sure to include at least:

- ✓ 8 characters
- ✓ 1 letter
- ✓ 1 number

* New Password

..... Good

* Confirm New Password

..... Match

Security Question

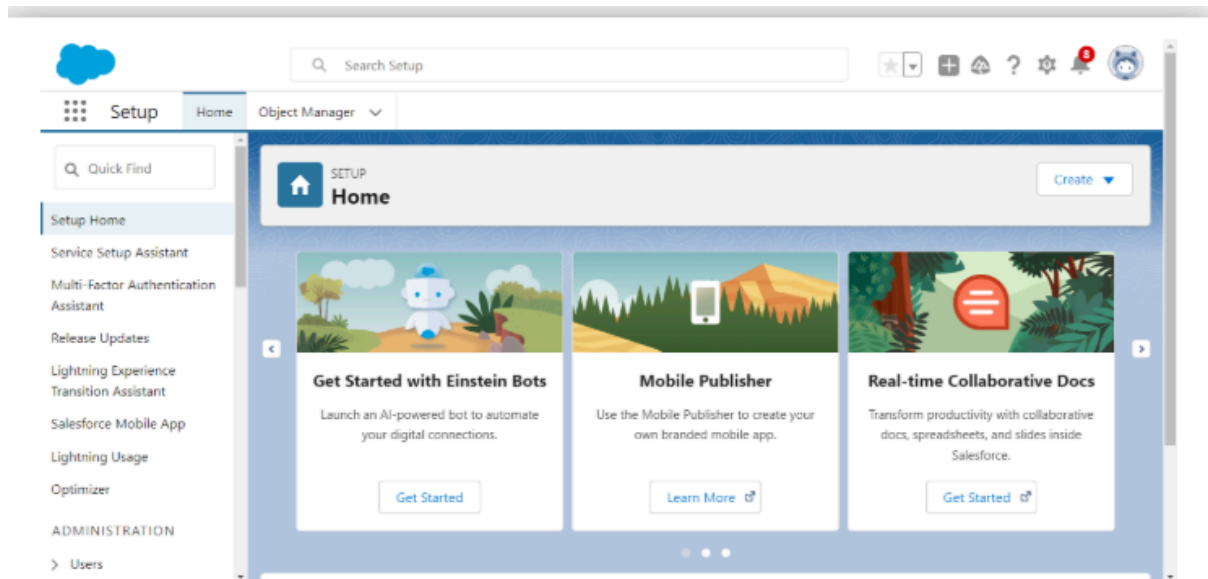
▼ In what city were you born?

* Answer

asdfghjkl

Change Password

Then you will redirect to your salesforce setup page.



6.2 Custom Object Creation

Created key custom objects:

Flight – Stores flight details like name, capacity, departure time.

SETUP
New Custom Object

Permissions for this object are disabled for all profiles by default. You can enable object permissions in permission sets or by editing custom profiles. [Tell me more!](#) [Don't show this message again](#)

Custom Object Definition Edit Save Save & New Cancel

Custom Object Information

The singular and plural labels are used in tabs, page layouts, and reports.

Label: Example: Account

Plural Label: Example: Accounts

Starts with vowel sound: ☐

The Object Name is used when referencing the object via the API.

Object Name: Example: Account

Description:

Context-Sensitive Help Setting: ☒ Open the standard Salesforce.com Help & Training window
☐ Open a window using a Visualforce page

Context Name:

Enter Record Name Label and Format

The Record Name appears in page layouts, key lists, related lists, lookups, and search results. For example, the Record Name for Account is "Account Name" and for Case it is "Case Number". Note that the Record Name field is always called "Record Name".

Record Name: Example: Account Name

Data Type:

Optional Features

☒ Allow Reports ←

☐ Allow Activities

☐ Track Field History

☐ Allow in Chatter Groups

☐ Enable Licensing [...](#)

Object Classification

When these settings are enabled, this object is classified as an Enterprise Application object. When these settings are disabled, this object is classified as a Light Application object. [Learn more](#)

☒ Allow Sharing

☒ Allow Bulk API Access

☒ Allow Streaming API Access

Deployment Status [What is this?](#)

☐ In Development

☒ Deployed

Search Status

When this setting is enabled, your users can find records of this object type when they search. [Learn more](#)

☒ Allow Search ←

Object Creation Options (Available only when custom object is first created)

☐ Add Notes and Attachments related list to default page layout

☐ Launch New Custom Tab Wizard after saving this custom object

Save Save & New Cancel

↓

↑

Booking – Handles reservations with fields like Booking ID, Departure Date.

Custom Object Definition Edit

SaveSave & NewCancel

Custom Object Information

The singular and plural labels are used in tabs, page layouts, and reports. Be careful when changing the name or label as it may affect existing integrations and merge templates.

Label Example: Account

Plural Label Example: Accounts

Starts with vowel sound ☐

The Object Name is used when referencing the object via the API.

Object Name Example: Account

Description

Context-Sensitive Help Setting ☒ Open the standard Salesforce.com Help & Training window ☐ Open a window using a Visualforce page

Content Name

Enter Record Name Label and Format

The Record Name appears in page layouts, key lists, related lists, lookups, and search results. For example, the Record Name for Account is "Account Name" and for Case it is "Case Number". Note that the Record Name field is always called "Name" when referenced via the API.

Record Name Example: Account Name

Data Type Warning: If you plan to insert a high volume of records in this object, via the API for example, use the Text data type.

Display Format Example: A-{0000} [What is This?](#)

Optional Features

☒ Allow Reports
 ☐ Allow Activities
 ☐ Track Field History
 ☐ Allow in Chatter Groups
 ☐ Enable Licensing [i](#)

Object Classification

When these settings are enabled, this object is classified as an Enterprise Application object. When these settings are disabled, this object is classified as a Light Application object. [Learn more.](#)

☒ Allow Sharing
 ☒ Allow Bulk API Access
 ☒ Allow Streaming API Access

Optional Features

☒ Allow Reports
 ☐ Allow Activities
 ☐ Track Field History
 ☐ Allow in Chatter Groups
 ☐ Enable Licensing [i](#)

Object Classification

When these settings are enabled, this object is classified as an Enterprise Application object. When these settings are disabled, this object is classified as a Light Application object. [Learn more.](#)

☒ Allow Sharing
 ☒ Allow Bulk API Access
 ☒ Allow Streaming API Access

Deployment Status

☐ In Development
 ☒ Deployed

Search Status

When this setting is enabled, your users can find records of this object type when they search. [Learn more.](#)

☒ Allow Search

Passenger – Manages passenger details such as name, passport info.

Passenger

Custom Object Definition Edit

SaveSave & NewCancel

Custom Object Information

The singular and plural labels are used in tabs, page layouts, and reports. Be careful when changing the name or label as it may affect existing integrations and merge templates.

Label

Passenger

Example: Account

Plural Label

Passengers

Example: Accounts

Starts with vowel sound

☐

The Object Name is used when referencing the object via the API.

Object Name

Passenger

Example: Account

Description

Context-Sensitive Help Setting

☒ Open the standard Salesforce.com Help & Training window

☐ Open a window using a Visualforce page

Content Name

--None--

Enter Record Name Label and Format

The Record Name appears in page layouts, key lists, related lists, lookups, and search results. For example, the Record Name for Account is "Account Name" and for Case it is "Case Number". Note that the Record Name field is always called "Name" when referenced via the API.

Record Name

Passenger Id

Example: Account Name

Data Type

Auto Number

Warning: If you plan to insert a high volume of records in this object, via the API for example, use the Text data type.

Display Format

Bk-{0000}

Example: A-{0000} [What Is This?](#)

Optional Features

☒ Allow Reports

☐ Allow Activities

☐ Track Field History

☐ Allow in Chatter Groups

☐ Enable Licensing [i](#)

Object Classification

When these settings are enabled, this object is classified as an Enterprise Application object. When these settings are disabled, this object is classified as a Light Application object. [Learn more.](#)

☒ Allow Sharing

☒ Allow Bulk API Access

☒ Allow Streaming API Access

Deployment Status

☐ In Development

☒ Deployed

Search Status

When this setting is enabled, your users can find records of this object type when they search. [Learn more.](#)

☒ Allow Search

Crew – Records crew member roles and assignments.

VIEW

Custom Object Definition Edit

SaveSave & NewCancel

Custom Object Information

The singular and plural labels are used in tabs, page layouts, and reports. Be careful when changing the name or label as it may affect existing integrations and merge templates.

Label

Crew

Example: Account

Plural Label

Crew

Example: Accounts

Starts with vowel sound

☐

The Object Name is used when referencing the object via the API.

Object Name

Crew

Example: Account

Description

Context-Sensitive Help Setting

☒ Open the standard Salesforce.com Help & Training window
☐ Open a window using a Visualforce page

Content Name

--None--

Enter Record Name Label and Format

The Record Name appears in page layouts, key lists, related lists, lookups, and search results. For example, the Record Name for Account is "Account Name" and for Case it is "Case Number". Note that the Record Name field is always called "Name" when referenced via the API.

Record Name

Crew Id

Example: Account Name

Data Type

Auto Number

Warning: If you plan to insert a high volume of records in this object, via the API for example, use the Text data type.

Display Format

Cr-(0000)

Example: A-(0000) [What Is This?](#)

Optional Features

- ☒ Allow Reports
- ☐ Allow Activities
- ☐ Track Field History
- ☐ Allow in Chatter Groups
- ☐ Enable Licensing [i](#)

Object Classification

When these settings are enabled, this object is classified as an Enterprise Application object. When these settings are disabled, this object is classified as a Light Application object. [Learn more.](#)

- ☒ Allow Sharing
- ☒ Allow Bulk API Access
- ☒ Allow Streaming API Access

Deployment Status

- ☐ In Development
- ☒ Deployed

Search Status

When this setting is enabled, your users can find records of this object type when they search. [Learn more.](#)

- ☒ Allow Search

6.3 Field & Relationship Design

Added essential custom fields: Date, Time, Number, Picklist, Auto Number.

Established lookup relationships:

Booking → Flight

Flight

Custom Field Definition Edit

Change Field Type

Save

Cancel

Field Information

Field Label

Flight

Field Name

Flight

Description

Help Text

Data Owner

User

Field Usage

--None--

Data Sensitivity Level

--None--

Compliance Categorization

Available

PII

HIPAA

GDPR

PCI

Chosen

Lookup Options

Related To

Flight

Related List Label

Bookings

Required

☐ Always require a value in this field in order to save a record

What to do if the lookup record is deleted?

☒ Clear the value of this field. You can't choose this option if you make this field required.

☐ Don't allow deletion of the lookup record that's part of a lookup relationship.

Child Relationship Name

Bookings

Lookup Filter

Optionally, create a filter to limit the records available to users in the lookup field. [Tell me more!](#)

[Show Filter Settings](#)

Booking → Passenger

Passenger Name

Custom Field Definition Edit

Change Field Type

Save

Cancel

Field Information

Field Label

Passenger Name

Field Name

Passenger_Name

Description

Help Text

Data Owner

User

Field Usage

--None--

Data Sensitivity Level

--None--

Compliance Categorization

Available

PII

HIPAA

GDPR

PCI

Chosen

Lookup Options

Related To

Passenger

Related List Label

Bookings

Required

☐ Always require a value in this field in order to save a record

What to do if the lookup record is deleted?

☒ Clear the value of this field. You can't choose this option if you make this field required.

☐ Don't allow deletion of the lookup record that's part of a lookup relationship.

Child Relationship Name

Bookings

Lookup Filter

Optionally, create a filter to limit the records available to users in the lookup field. [Tell me more!](#)

[Show Filter Settings](#)

Crew → Flight

Flight

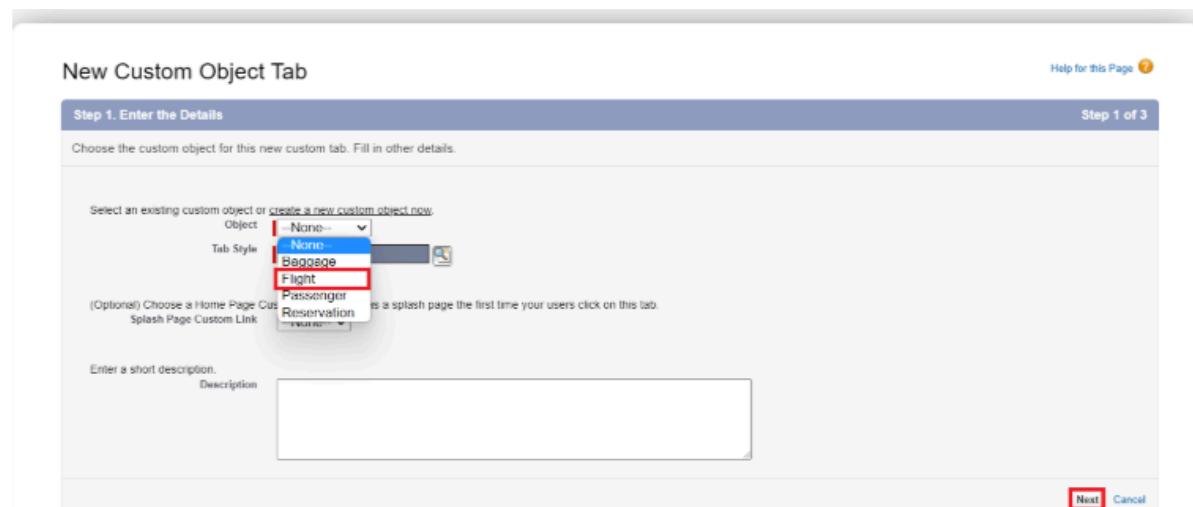
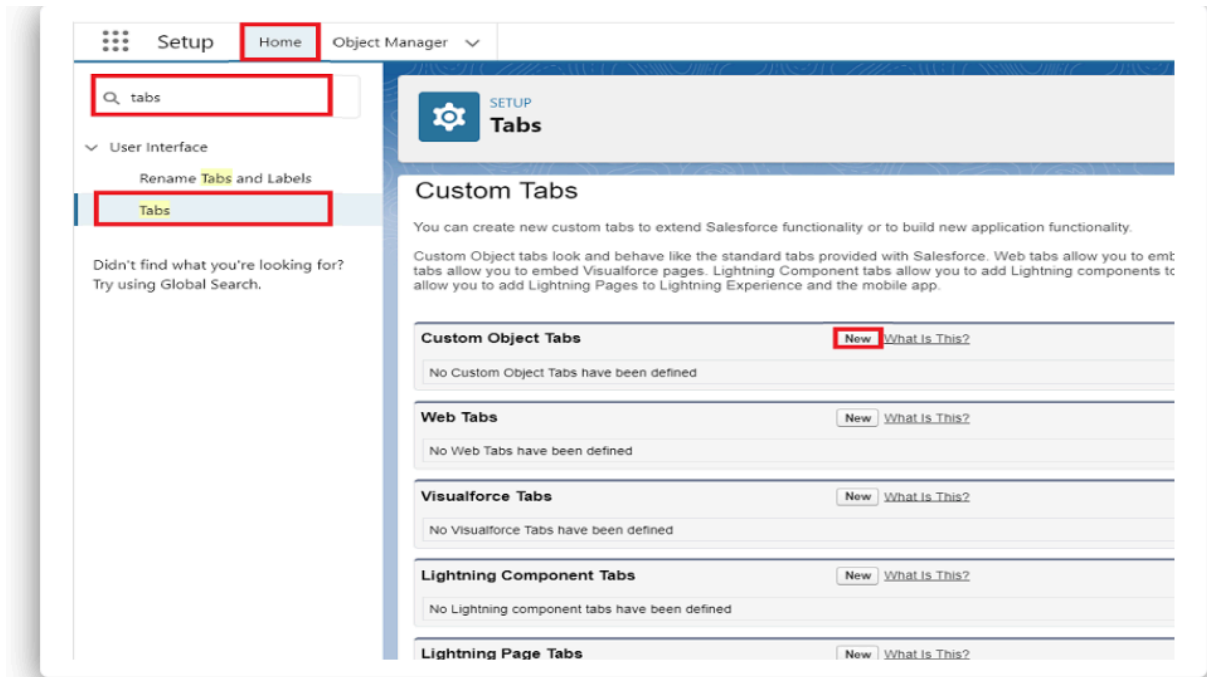
The screenshot shows the 'Custom Field Definition Edit' interface for a field named 'Flight'. The form is divided into three main sections: 'Field Information', 'Lookup Options', and 'Lookup Filter'.
Field Information: This section contains fields for 'Field Label' (set to 'Flight'), 'Field Name' (set to 'Flight'), 'Description', and 'Help Text'. It also includes dropdowns for 'Data Owner' (set to 'User'), 'Field Usage' (set to '--None--'), and 'Data Sensitivity Level' (set to '--None--'). A 'Compliance Categorization' section features two lists: 'Available' (containing PII, HIPAA, GDPR, PCI) and 'Chosen' (empty), with arrows for moving items between them.
Lookup Options: This section shows 'Related To' (set to 'Flight') and 'Related List Label' (set to 'Crews'). It includes a 'Required' checkbox (unchecked) and a 'What to do if the lookup record is deleted?' section with two radio buttons: 'Clear the value of this field...' (selected) and 'Don't allow deletion...' (unchecked). A 'Child Relationship Name' field is set to 'Crews'.
Lookup Filter: This section has a note about creating a filter to limit records and a link to 'Tell me more!'. A 'Show Filter Settings' link is also present.
At the top and bottom of the form are buttons for 'Change Field Type', 'Save', and 'Cancel'.

Created field dependencies (e.g., Departs From → Departs To).

6.4 Tab and App Configuration

Developed a Lightning App called Airline Management System.

Added custom tabs for quick access to Flight, Booking, Passenger, and Crew objects.



6.5 User Interface & Access Control

Designed Profiles:

Senior Admin

Profile Edit

Name

Senior Admin

User License

Salesforce

Description

Save

Save & New

Cancel

Custom Profile

✓

Custom App Settings

	Visible	Default		Visible	Default
AirLine Management System (AirLine_Management_System)	<input checked="" type="checkbox"/>	<input type="radio"/>	My Service Journey (standard__MSJApp)	<input checked="" type="checkbox"/>	<input type="radio"/>
All Tabs (standard__AllTabSet)	<input checked="" type="checkbox"/>	<input type="radio"/>	Queue Management (standard__QueueManagement)	<input checked="" type="checkbox"/>	<input type="radio"/>
Analytics Studio (standard__insights)	<input checked="" type="checkbox"/>	<input type="radio"/>	Sales (standard__LightningSales)	<input checked="" type="checkbox"/>	<input type="radio"/>
App Launcher (standard__AppLauncher)	<input checked="" type="checkbox"/>	<input type="radio"/>	Sales (standard__Sales)	<input type="checkbox"/>	<input checked="" type="radio"/>
Approvals (standard__Approvals)	<input checked="" type="checkbox"/>	<input type="radio"/>	Sales Cloud Mobile (standard__SalesCloudMobile)	<input checked="" type="checkbox"/>	<input type="radio"/>
Automation (standard__FlowsApp)	<input checked="" type="checkbox"/>	<input type="radio"/>	Sales Console (standard__LightningSalesConsole)	<input checked="" type="checkbox"/>	<input type="radio"/>
Bolt Solutions (standard__LightningBolt)	<input checked="" type="checkbox"/>	<input type="radio"/>	Salesforce Chatter (standard__Chatter)	<input checked="" type="checkbox"/>	<input type="radio"/>
Community (standard__Community)	<input checked="" type="checkbox"/>	<input type="radio"/>	Salesforce Scheduler Setup (standard__LightningScheduler)	<input checked="" type="checkbox"/>	<input type="radio"/>
Content (standard__Content)	<input checked="" type="checkbox"/>	<input type="radio"/>	Sample Console (standard__ServiceConsole)	<input type="checkbox"/>	<input type="radio"/>
Data Cloud (standard__Audience360)	<input checked="" type="checkbox"/>	<input type="radio"/>	Service (standard__Service)	<input checked="" type="checkbox"/>	<input type="radio"/>
Data Manager (standard__DataManager)	<input checked="" type="checkbox"/>	<input type="radio"/>	Service Console (standard__LightningService)	<input checked="" type="checkbox"/>	<input type="radio"/>
Digital Experiences (standard__SalesforceCMS)	<input checked="" type="checkbox"/>	<input type="radio"/>	Site.com (standard__Sites)	<input checked="" type="checkbox"/>	<input type="radio"/>
Lightning Usage App (standard__LightningInstrumentation)	<input checked="" type="checkbox"/>	<input type="radio"/>	Subscription Management (standard__RevenueCloudConsole)	<input checked="" type="checkbox"/>	<input type="radio"/>
Marketing CRM Classic (standard__Marketing)	<input checked="" type="checkbox"/>	<input type="radio"/>	WDC (standard__Work)	<input checked="" type="checkbox"/>	<input type="radio"/>

Service Provider Access

Custom Object Permissions

	Basic Access				Data Administration		
	Read	Create	Edit	Delete	View All Records	Modify All Records	View All Fields
Bookings	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crew	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Basic Access				Data Administration		
	Read	Create	Edit	Delete	View All Records	Modify All Records	View All Fields
Flights	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Passengers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

General Admin

To create a new profile:

Go to setup --> type profiles in quick find box --> click on profiles --> clone the desired profile (Standard Platform User)-->enter profile name (General Admin) --> Save.

Clone Profile

Enter the name of the new profile.

You must select an existing profile to clone from.

Existing Profile	Standard Platform User
User License	Salesforce Platform
Profile Name	<input type="text" value="General Admin"/>

While still on the profile page, then click Edit.

Scroll down to Custom Object Permissions and Give access permissions for read, create and edit on Passenger, and booking objects.

General Admin

Set the permissions and page layouts for this profile.

Profile Edit

Name:

User License: Salesforce Platform

Description:

Custom Profile: ☒

Custom App Settings

	Visible	Default		Visible	Default
AirLine Management System (AirLine_Management_System)	<input type="checkbox"/>	<input type="radio"/>	Platform (standard_Platform)	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>
Analytics Studio (standard_Insights)	<input type="checkbox"/>	<input type="radio"/>	WDC (standard_Work)	<input type="checkbox"/>	<input type="radio"/>
App Launcher (standard_AppLauncher)	<input type="checkbox"/>	<input type="radio"/>			

Service Provider Access

Custom Object Permissions

	Object Access				Object Administration		
	Read	Create	Edit	Delete	View All Records <small>1</small>	Modify All Records <small>1</small>	View All Fields
Bookings	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Object Access				Object Administration		
	Read	Create	Edit	Delete	View All Records <small>1</small>	Modify All Records <small>1</small>	View All Fields
Flights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passengers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Session Settings

Management Admin

Went to Setup, typed "profiles" in the quick find box, clicked on Profiles, cloned the desired profile (Standard Platform User), entered the profile name (Management Admin), and saved. While still on the profile page, clicked Edit, scrolled down to Custom Object Permissions, gave access permissions for read, edit, and create for Flight and Crew, scrolled down, and clicked on Save.

Management Admin

Set the permissions and page layouts for this profile.

Profile Edit

Name

Management Admin

User License

Salesforce Platform

Description

Save

Save & New

Cancel

Custom Profile ☒

Custom App Settings

	Visible	Default		Visible	Default
AirLine Management System (AirLine_Management_System)	<input type="checkbox"/>	<input type="radio"/>	Platform (standard_Platform)	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>
Analytics Studio (standard_Insights)	<input type="checkbox"/>	<input type="radio"/>	WDC (standard_Work)	<input type="checkbox"/>	<input type="radio"/>
App Launcher (standard_AppLauncher)	<input type="checkbox"/>	<input type="radio"/>			

Custom Object Permissions

	Basic Access				Global Administration		
	Read	Create	Edit	Delete	View All Records	Modify All Records	View All Fields
Bookings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crew	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Basic Access				Global Administration		
	Read	Create	Edit	Delete	View All Records	Modify All Records	View All Fields
Flights	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passengers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Crew Member

Created Crew Member Profile for Crew Members and gave them access permission to read only as we had done in the previous activity.

Crew Member

Set the permissions and page layouts for this profile.

Profile Edit

Save

Save & New

Cancel

Name

Crew Member

User License

Salesforce Platform

Description

Custom Profile

✓

Custom App Settings

	Visible	Default
AirLine Management System (AirLine_Management_System)	<input type="checkbox"/>	<input type="radio"/>
Analytics Studio (standard__Insights)	<input type="checkbox"/>	<input type="radio"/>
App Launcher (standard__AppLauncher)	<input type="checkbox"/>	<input type="radio"/>
Platform (standard__Platform)	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>
WDC (standard__Work)	<input type="checkbox"/>	<input type="radio"/>

Custom Object Permissions	Object Access				Field Permissions		
	Read	Create	Edit	Delete	View All Records ¹	Modify All Records ¹	View All Fields
Bookings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crew	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Custom Object Permissions	Object Access				Field Permissions		
	Read	Create	Edit	Delete	View All Records ¹	Modify All Records ¹	View All Fields
Flights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passengers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Session Settings

Assigned object permissions based on role requirements.

Created Roles and established hierarchy (Crew Member → Management Admin → Senior Admin → CEO).

Go to quick find --> Search for Roles --> click on set up roles.

Setup

Home

Object Manager

roles

Users

Feature Settings

Sales

Contact Roles on Contracts

Contact Roles on Opportunities

Service

Case Teams

Case Team Roles

Contact Roles on Cases

Didn't find what you're looking for? Try using Global Search.

SETUP

Roles

Understanding Roles

Set up your Role Hierarchy to control how your organization reports on and accesses data.

Sample Role Hierarchy

View other sample Role Hierarchies: Territory-based Sample

Executive Staff

Senior Sales

Senior Service

Senior Support

Executive Staff

Senior Sales

Senior Service

Senior Support

Executive Staff

Senior Sales

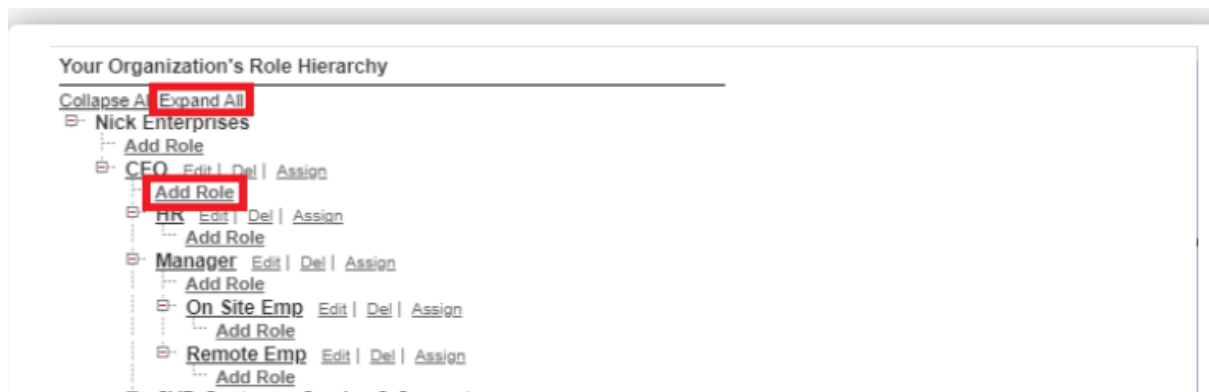
Senior Service

Senior Support

Set Up Roles

Don't show this page again

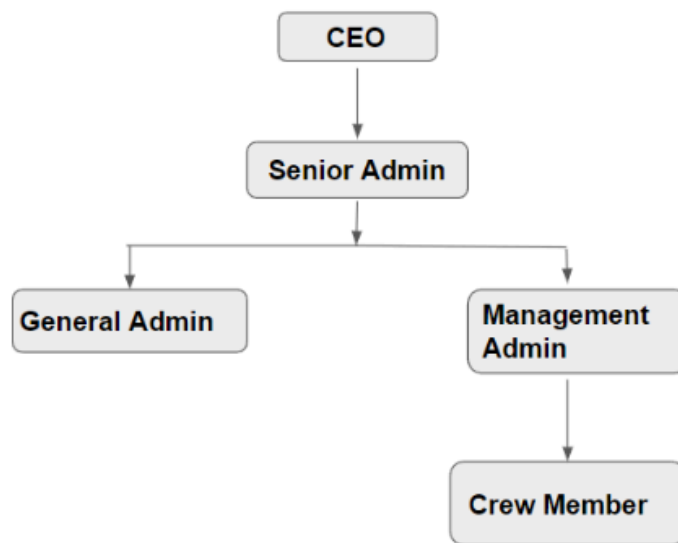
Click on Expand All and click on add role under whom this role works.



Gave the label as “Senior Admin” and the Role name got auto populated. Checked to whom this role (Senior Admin) reported. Then clicked on Save.

The screenshot shows a "Role Edit" form with the title "New Role". The form contains several input fields and buttons. The "Label" field is highlighted with a red box. The "Role Name" field is also highlighted with a red box. The "This role reports to" field is highlighted with a red box and contains the text "CEO". The "Role Name as displayed on reports" field is empty. At the bottom of the form, there are three buttons: "Save", "Save & New", and "Cancel". The "Save" button is highlighted with a red box.

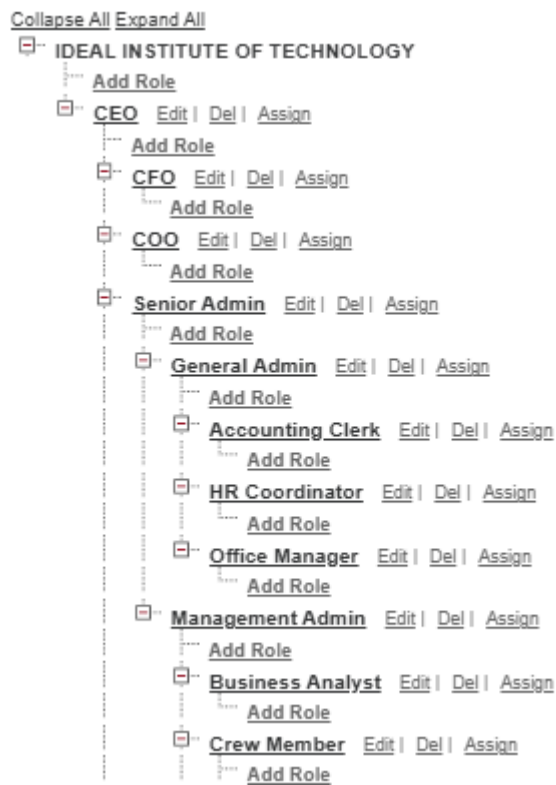
Referred the below diagram to understand which role reports to which role.



Role Hierarchy: The above diagram represents which role reports to which one.

Created three more roles for General Admin, Management Admin and Crew Member.

Note: Crew Members report to Management Admin, Management Admin & General Admin Reports to Senior Admin and only Senior Admin reports to CEO.



6.6 Automation Implementation

Created Apex Trigger to enforce mandatory phone number input for Passenger records.

Built Apex Class and Test Class for validation logic and code coverage.

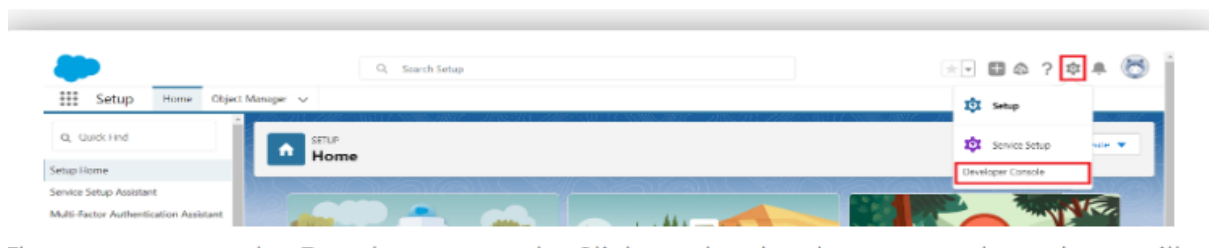
Designed Screen Flow for Booking creation with:

Input screen

Record creation element

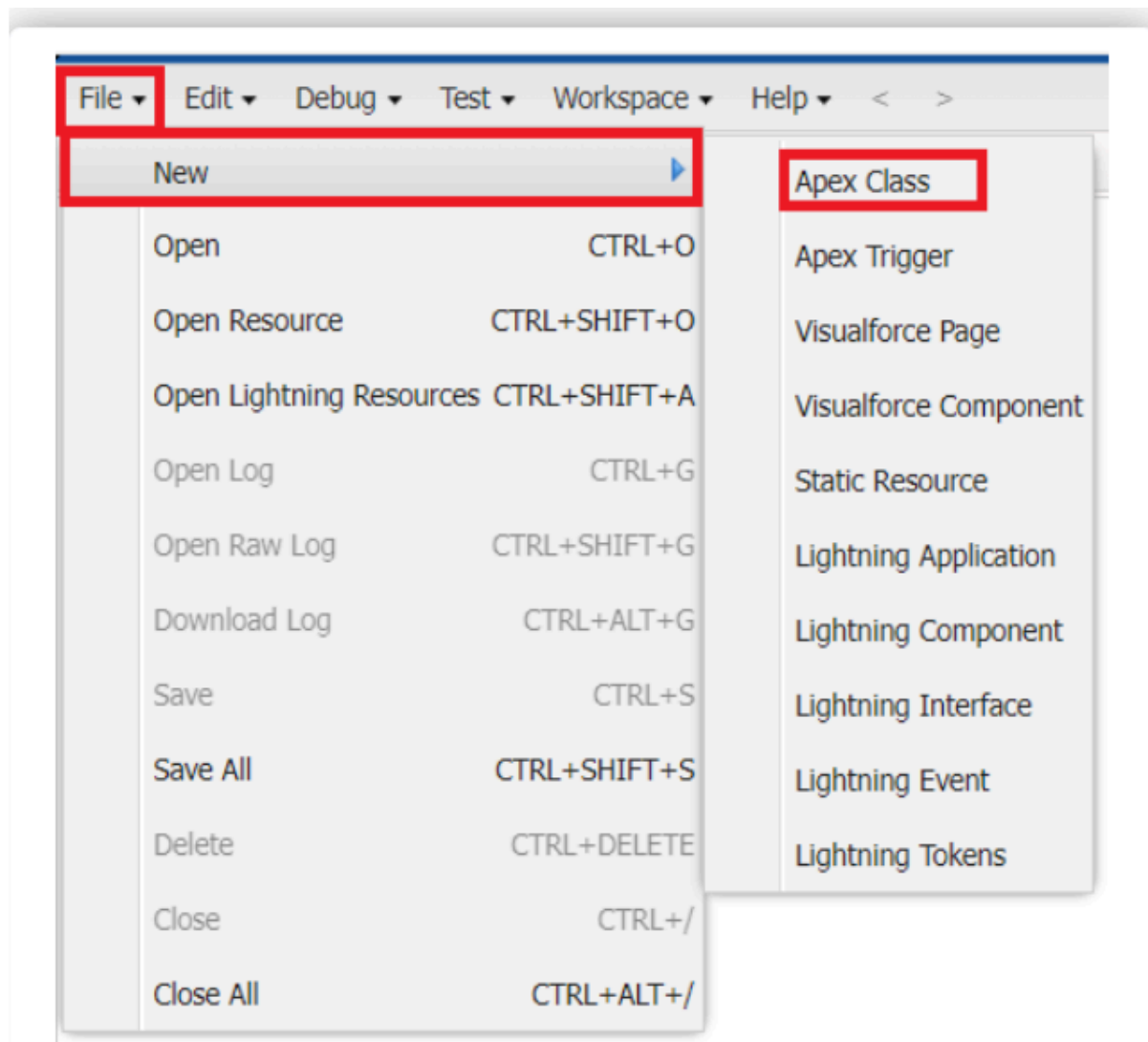
Success confirmation screen

Go to Setup --> Click on the gear icon --> Select Developer Console.

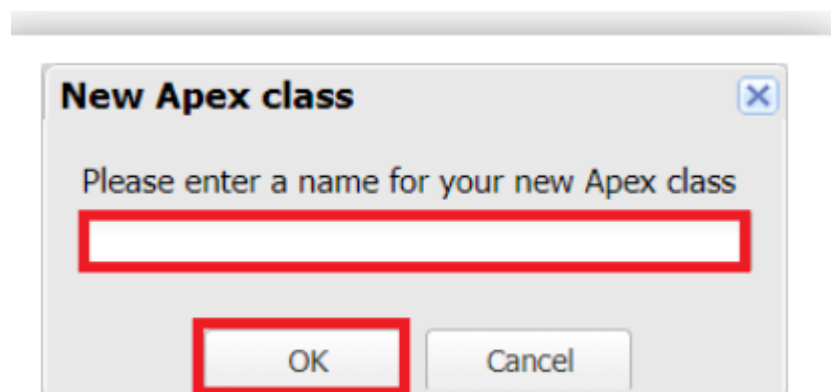


Then we can see the Developer console. Click on the developer console and you will navigate to a new console window.

To create a new Apex Class follow the below steps:
Click on the file --> New --> Apex Class.

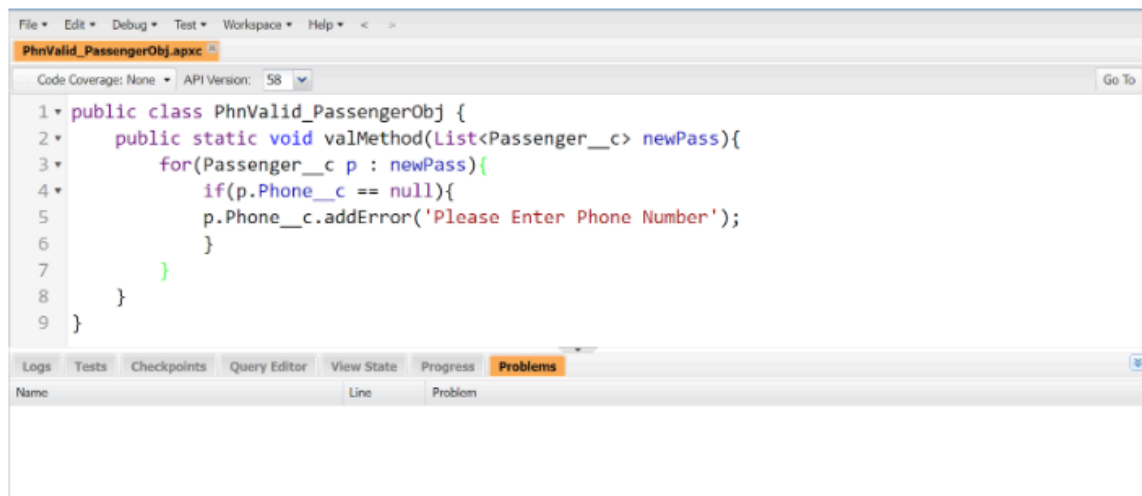


Give the Apex Class name as “PhnValid_PassengerObj”.



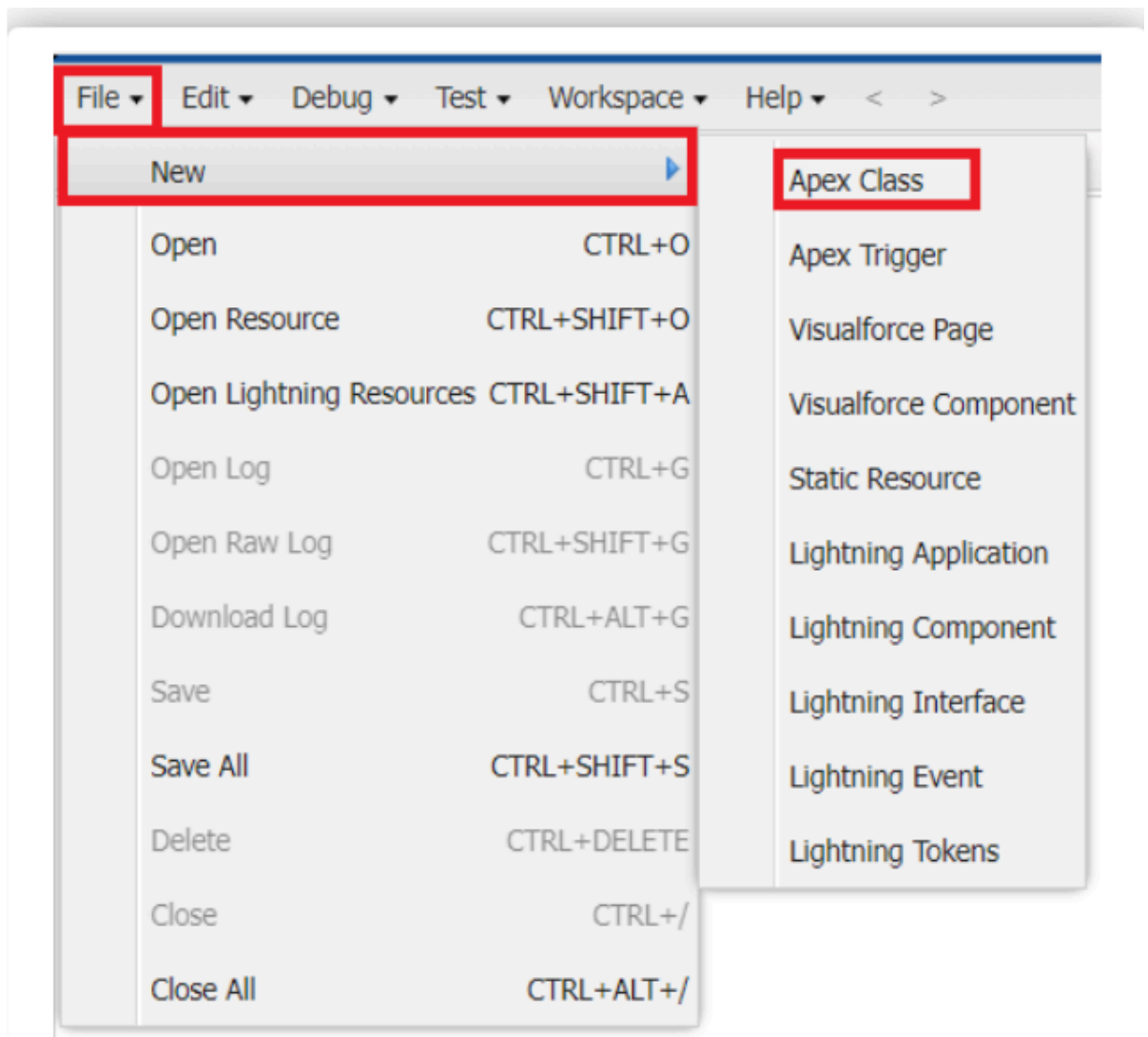
Click ok

Now write the code logic here

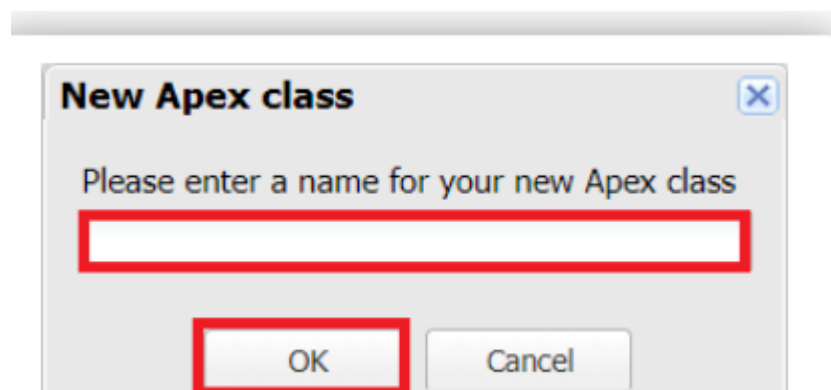


Create an Apex Test Class

To create a new Apex Class follow the below steps:
Click on the file --> New --> Apex Class.

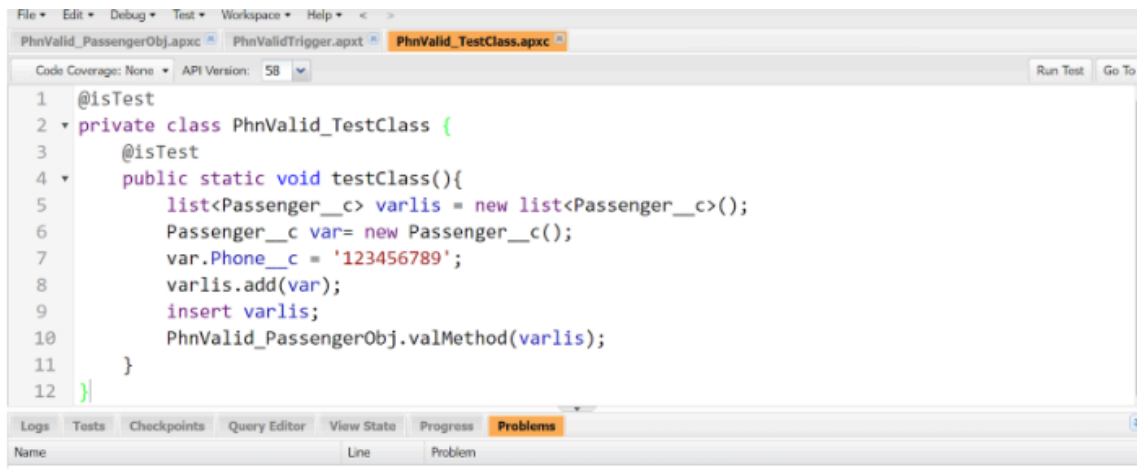


Gave the Apex Class name as “PhnValid_TestClass”.



Click ok

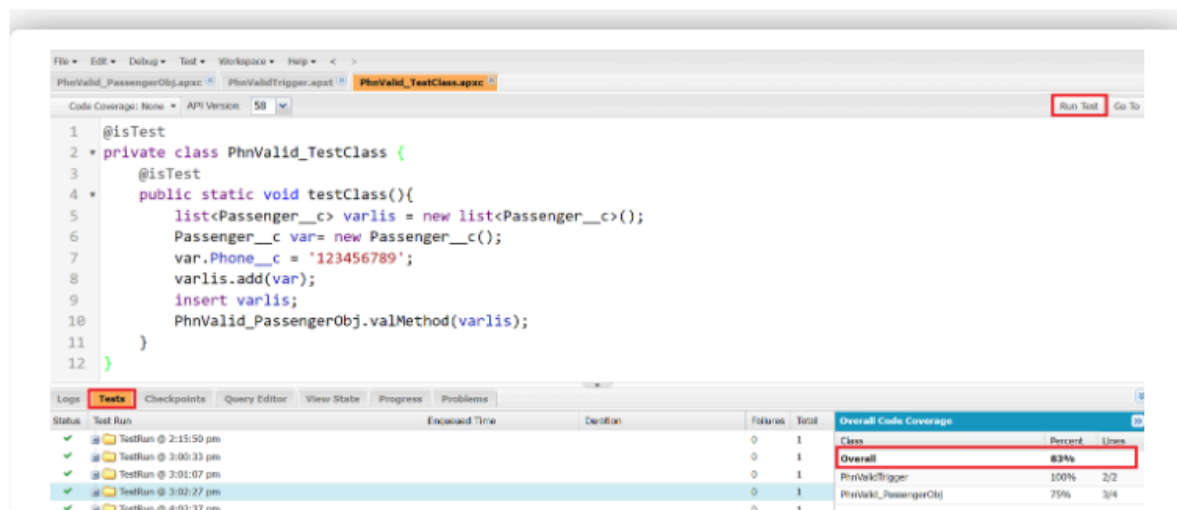
Now wrote the code logic here



```
1 @isTest
2 private class PhnValid_TestClass {
3     @isTest
4     public static void testClass(){
5         list<Passenger__c> varlis = new list<Passenger__c>();
6         Passenger__c var= new Passenger__c();
7         var.Phone__c = '123456789';
8         varlis.add(var);
9         insert varlis;
10        PhnValid_PassengerObj.valMethod(varlis);
11    }
12 }
```

Saved the code.(click on file --> Save).

Clicked on “Run Test” and then clicked on Test under the terminal section and done check that your overall code coverage is more than 75%.



Status	Test Run	Elapsed Time	Duration	Failures	Total
✓	TestRun @ 2:15:50 pm			0	1
✓	TestRun @ 3:00:33 pm			0	1
✓	TestRun @ 3:01:07 pm			0	1
✓	TestRun @ 3:02:27 pm			0	1
✓	TestRun @ 4:02:37 pm			0	1

Overall Code Coverage		
Class	Percent	Lines
Overall	83%	
PhnValidTrigger	100%	2/2
PhnValid_PassengerObj	75%	3/4

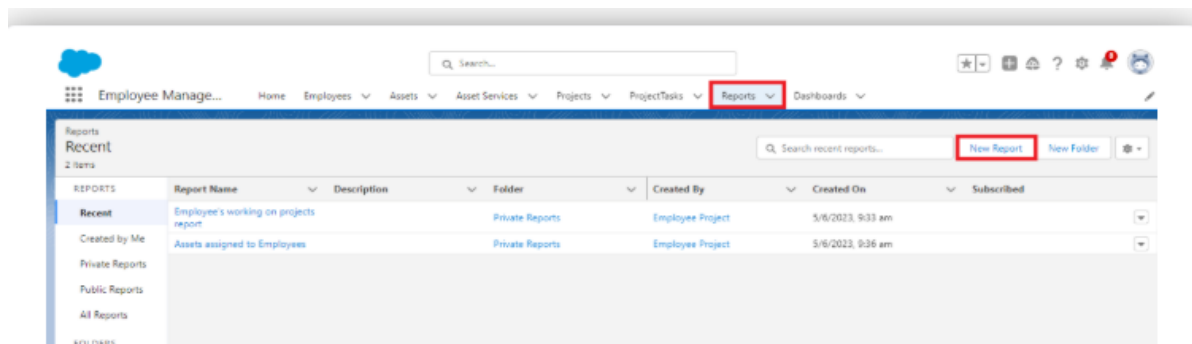
6.7 Reporting & Dashboards

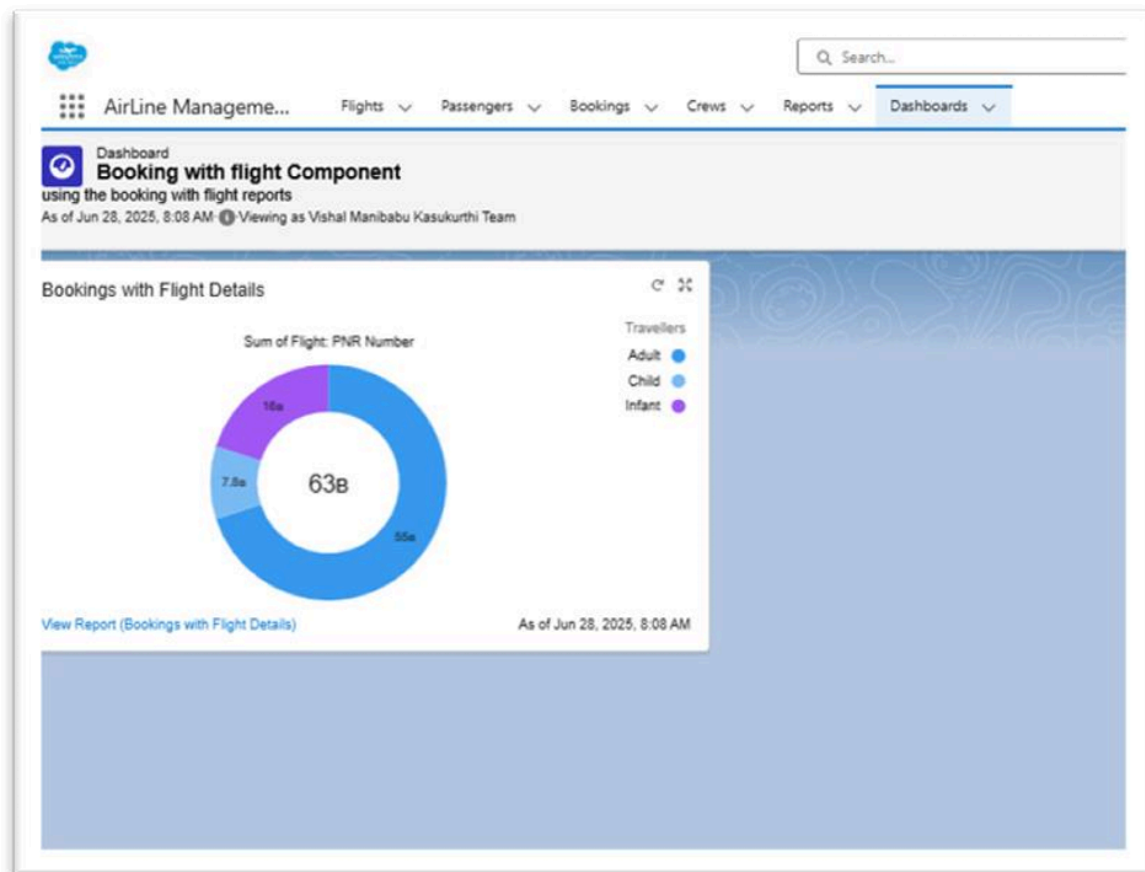
Developed three key Reports:

Bookings with Flight Details

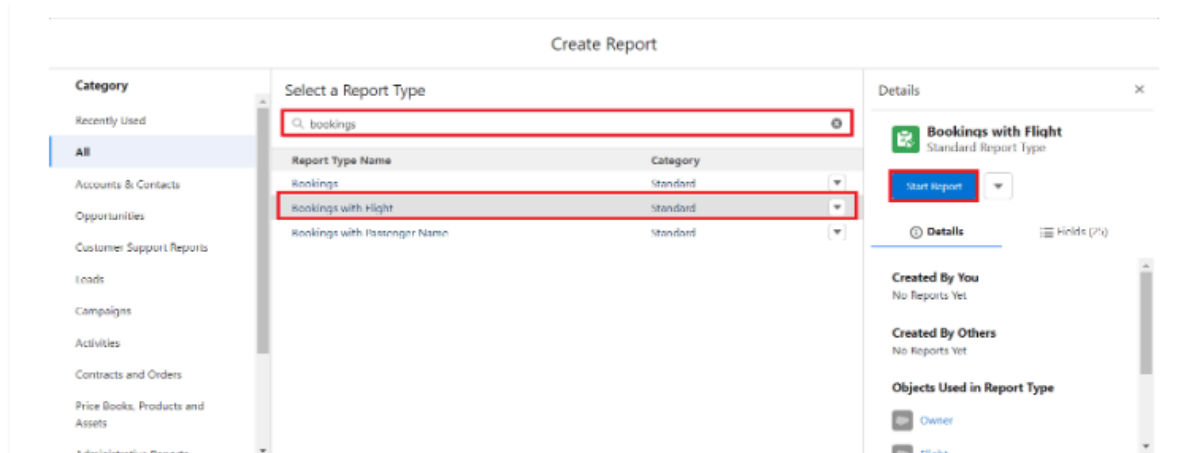
Created Report

Go to the app --> click on the reports tab
Click New Report.





Selected report type from category or from report type panel or from search panel --> clicked on start report.



Flight Management... Flights Passengers Crews Bookings Reports Dashboards Leaves

REPORT New Bookings with Flight Report

Bookings with Flight

Processing a limited number of records. Run the report to see everything.

Update Preview Automatically

Travellers	Flight: PHR Number	Booking: Booking Id	Flight: Flight Name	Class	Departs From	Departs to	Passenger Name	Flight: Capacity	Flight: Arrival Time
Adult (2)	6,78,901	Bk-0001	Air India Express	Economy	Delhi	Bengaluru	P-0003	300	2:30 am
	6,78,901	Bk-0007	Air India Express	-	Delhi	Chennai	P-0004	300	2:30 am
Child (7)	6,78,901	Bk-0005	Air India Express	-	Kolkata	Delhi	P-0004	300	2:30 am
	6,78,901	Bk-0008	Air India Express	-	Delhi	Kolkata	P-0004	300	2:30 am
	6,78,901	Bk-0009	Air India Express	-	Delhi	Kolkata	P-0005	300	2:30 am
	6,78,901	Bk-0010	Air India Express	Business	Delhi	Kolkata	P-0004	300	2:30 am
	4,56,789	Bk-0002	Indigo	Business	Mumbai	Bengaluru	P-0009	300	2:00 am
	4,56,789	Bk-0004	Indigo	-	Chennai	Kolkata	P-0002	300	2:00 am
	1,23,456	Bk-0006	Flight Emirates	-	Delhi	Bengaluru	P-0002	300	2:00 am
Infant (1)	4,56,789	Bk-0003	Indigo	First Class	Bengaluru	Chennai	P-0003	300	2:00 am
Total (10)	12,39,145							1,300	

Row Counts: ☒ Detail Rows: ☒ Subtotals: ☐ Grand Total: ☒

Saved the report as “Bookings with Flight Details”.

Save Report

* Report Name
Bookings with Flight Details

Report Unique Name ⓘ
New_Bookings_with_Flight_Report_129

Report Description

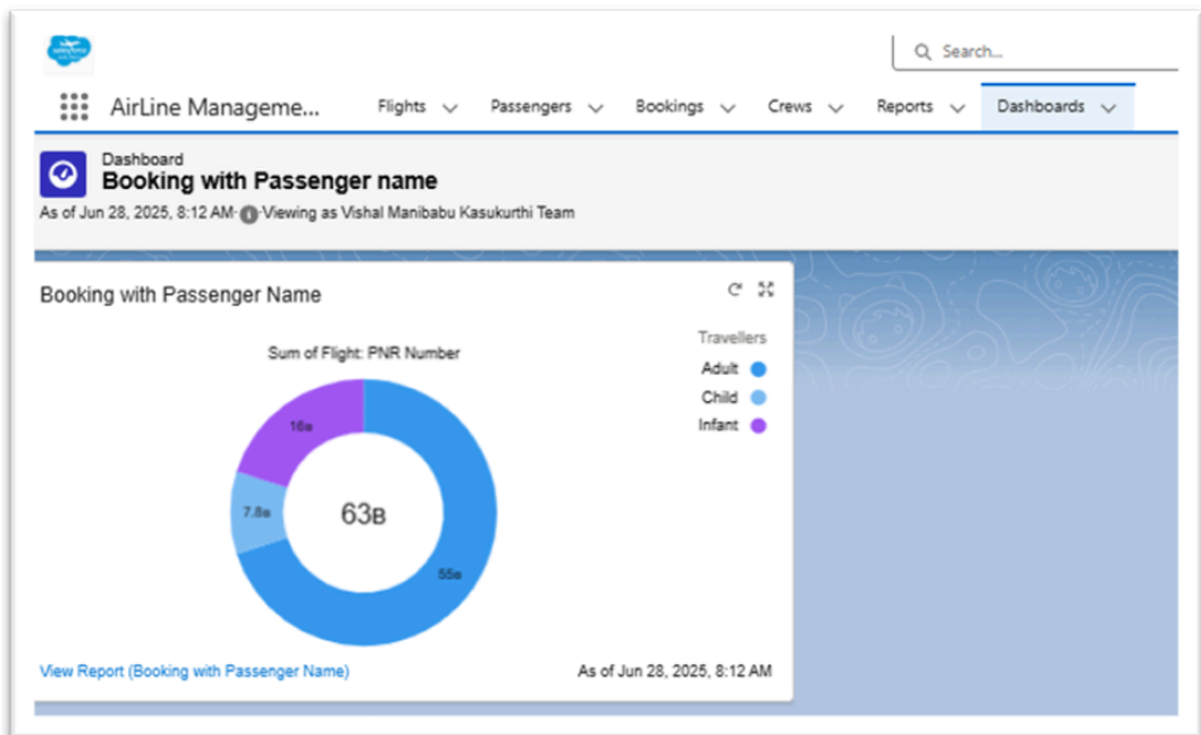
Folder
Private Reports Select Folder


Cancel Save

Click on Save.

Bookings with Passenger Names

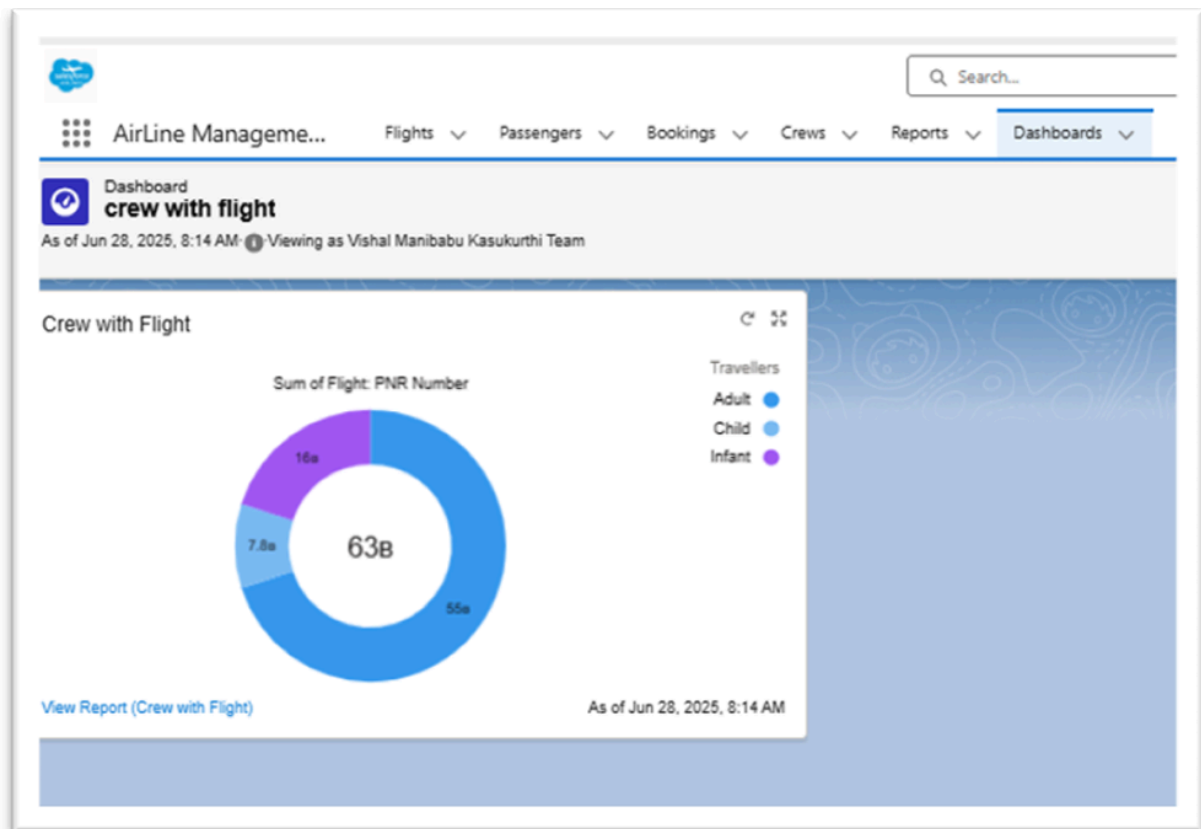
- Created a report to display bookings grouped by Passenger Names for easy analysis and tracking



<div>  <div> Report: Bookings with Flight Bookings with Flight Report </div> </div>							
Total Records		Total Flight: PNR Number					
10		514,985					
	Booking: Booking Id ▾	Flight: Flight Name ▾	Class ▾	Passenger Name ▾	Departs From ▾	Departs To ▾	Flight: PNR Number ▾
1	Bk-0006	vistara	Economy	Bk-0007	Delhi	Mumbai	5,454
2	Bk-0004	indigo	Economy	Bk-0007	Delhi	Bengaluru	4,545
3	Bk-0009	go first	First Class	Bk-0007	Delhi	Kolkata	7,895
4	Bk-0005	air india express	First Class	Bk-0008	Mumbai	Bengaluru	35,465
5	Bk-0007	spice jet	First Class	Bk-0009	Delhi	Chennai	1,232
6	Bk-0002	akasa air	Economy	Bk-0010	Mumbai	Chennai	5,789
7	Bk-0008	air india	First Class	Bk-0010	Mumbai	Delhi	4,564
8	Bk-0003	star air	Business	Bk-0011	Bengaluru	Delhi	5,464
9	Bk-0010	alliance air	Business	Bk-0011	Mumbai	Kolkata	444,577
10	Bk-0001	air india	Economy	Bk-0011	Delhi	Mumbai	4,564
11							514,985

Crew with Assigned Flights

Created a report with report type: “Crew with Flight”



Report: Bookings with Flight
Crew with flight

Total Records: 10 Total Flight: PNR Number: 514,985

	Booking: Booking Id	Flight: Flight Name	Class	Passenger Name	Departs From	Departs To	Flight: PNR Number
1	Bk-0006	vistara	Economy	Bk-0007	Delhi	Mumbai	5,454
2	Bk-0004	indigo	Economy	Bk-0007	Delhi	Bengaluru	4,545
3	Bk-0009	go first	First Class	Bk-0007	Delhi	Kolkata	7,895
4	Bk-0005	air india express	First Class	Bk-0008	Mumbai	Bengaluru	35,465
5	Bk-0007	spice jet	First Class	Bk-0009	Delhi	Chennai	1,232
6	Bk-0002	akasa air	Economy	Bk-0010	Mumbai	Chennai	5,789
7	Bk-0008	air india	First Class	Bk-0010	Mumbai	Delhi	4,564
8	Bk-0003	star air	Business	Bk-0011	Bengaluru	Delhi	5,464
9	Bk-0010	alliance air	Business	Bk-0011	Mumbai	Kolkata	444,577
10	Bk-0001	air india	Economy	Bk-0011	Delhi	Mumbai	4,564
11							514,985

Created corresponding Dashboards using donut and pie charts for visual insights.

6.8 Schema Visualization

Used Schema Builder to visually represent object relationships and confirm database design consistency.

7. FUNCTIONAL AND PERFORMANCE TESTING

7.1 Performance Testing

Data entry tested across 10+ records for each object

Apex trigger validated for phone field

Flows tested for booking object creation

8. RESULTS

8.1 Output

Screenshots Included in the appendix: Object creation, record insertion, reports, dashboards, flow screens.

Trigger Error on Passport Expiry date

Sai Kumar

Phone

9390175403

Passport Number

4.366.918

Passport Issue Date

6/6/2025



Passport Expiry Date

7/1/2020



Passport expiry date cannot be in the past.

Date of Birth

6/23/2025

Nationality

India

❗ We hit a snag.

Review the following fields

- [Passport Expiry Date](#)

Trigger Validation Error When Passport Expiry Date Is in the Past

To ensure data accuracy, I implemented a before insert and before update Apex trigger that prevents a **Passenger** record from being saved if the **Passport Expiry Date** is in the past. This validation was handled using a custom Apex class and tested with both valid and invalid expiry dates.

Class Name: PassportExpiryValidator.cls

```
public class PassportExpiryValidator {  
  
    public static void validate(List<Passenger__c> passengers) {  
  
        for (Passenger__c p : passengers) {  
  
            if (p.Passport_Expiry_Date__c != null &&  
p.Passport_Expiry_Date__c < Date.today()) {  
  
                p.Passport_Expiry_Date__c.addError('Passport expiry date  
cannot be in the past.');  
            }  
  
        }  
  
    }  
}
```

✓ This class checks each record's Passport Expiry Date and adds an error if the date is earlier than today.

Step 2: Created Apex Trigger

```
trigger PassportExpiryTrigger on Passenger__c (before insert, before  
update) {
```

```
if (Trigger.isBefore && (Trigger.isInsert || Trigger.isUpdate)) {  
    PassportExpiryValidator.validate(Trigger.new);  
}  
}
```

✓ This trigger runs **before insert and update**, and calls the validation method from the class.

Here is a **fully adapted version** of your original Lease Management System documentation — now modified to match your **Airline Management System (AMS)** project. This includes changes to advantages, future scope, conclusion, and code examples, all tailored for an airline domain..

9. ADVANTAGES & DISADVANTAGES

Advantages:

Automated operations

Real-time data access

User-role customization

Visual analytics with dashboards

Disadvantages:

Initial setup complexity

Dependent on internet access

10. CONCLUSION

The Salesforce-powered Airlines Management System brings structure, automation, and data integrity to airline operations, enabling better decision-making and improved service.

11. FUTURE SCOPE

Integration with third-party APIs (e.g., payment gateways)

Mobile app development

AI-powered analytics

12. APPENDIX

Apex Class: PhnValid_PassengerObj.cls

```
public class PhnValid_PassengerObj
{
    public static void valMethod(List newPass)
    {
        for(Passenger__c p : newPass)
        {
            if(p.Phone__c == null)
            {
```

```

        p.Phone__c.addError('please Enter phone Number');
    }
}
}

```

Apex Trigger: PhnValidTrigger.trigger

```

trigger PhnValidTrigger on Passenger__c (before insert) {
    if(trigger.isBefore && trigger.isInsert){
        PhnValid_PassengerObj.valMethod(trigger.new);
    }
}

```

Apex Test Class: PhnValid_TestClass.cls

```

@isTest
public class PhnValid_TestClass {
    @isTest
    public static void testClass(){
        list <Passenger__c> varlis = new
list<Passenger__c>();
        Passenger__c var = new Passenger__c();
        var.Phone__c = null;
        varlis.add(var);
        insert varlis;
        PhnValid_PassengerObj.valMethod(varlis);
    }
}

```


DEMO VIDEO: [LINK:https://drive.google.com/file/d/1ybPk0ax_3nZp6-KIXt7S6-MjXEKLAZ8l/view?usp=sharing](https://drive.google.com/file/d/1ybPk0ax_3nZp6-KIXt7S6-MjXEKLAZ8l/view?usp=sharing)

GitHub: <https://github.com/Sai-Kumar89654/AIRLINE-MANAGEMENT-SYSTEM>